

CLAIMS:

1. A method for starting an internal combustion engine
with electromechanically actuated valves, the method
5 comprising:
 processing a signal indicative of engine
 position;
 after processing said signal, setting an intake
 stroke on a cylinder with sufficient piston downward
10 movement to produce an engine output; and
 positioning valve timing based on said set
 intake stroke.
2. The method of Claim 1 wherein said cylinder is a
15 first available cylinder with sufficient piston downward
movement to produce an engine output.
3. The method of Claim 1 wherein said engine output is
a desired engine torque.
20
4. The method of Claim 1 wherein said engine output is
a desired cylinder air amount.
5. The method of Claim 1 wherein said engine output is
25 a desired engine speed.

6. A method for starting an internal combustion engine with electromechanically actuated valves, the method comprising:

5 processing a signal indicative of engine position;
 setting a stroke of a cylinder during a start based on piston position and direction of piston travel; and
 positioning valve timing of said cylinder based
10 on said set stroke.

7. The method of Claim 6 wherein said setting a stroke of a cylinder is further based on engine speed.

15 8. The method of Claim 6 wherein said setting a stroke of a cylinder is further based on barometric pressure.

9. The method of Claim 6 wherein said stroke of a cylinder is an intake stroke.

20 10. The method of Claim 6 wherein said stroke of a cylinder is an exhaust stroke.

11. The method of Claim 6 wherein said stroke of a
25 cylinder is a compression stroke.

12. The method of Claim 6 wherein said stroke of a cylinder is a power stroke.

30

13. A method for starting an internal combustion engine with electromechanically actuated valves, the method comprising:

5 processing a signal indicative of engine position;
 after processing said signal setting an compression stroke on a cylinder with sufficient piston upward movement to produce an engine output; and
 positioning valve timing based on said set
10 compression stroke.

14. The method of Claim 13 wherein said cylinder is a first available cylinder with sufficient piston downward movement to produce an engine output.

15
15. The method of Claim 13 wherein said engine output is a desired engine torque.

16. The method of Claim 13 wherein said engine output is
20 a desired cylinder air amount.

17. The method of Claim 13 wherein said engine output is a desired engine speed.

25 18. A method for starting an internal combustion engine with electromechanically actuated valves, the method comprising:

 determining position of said engine;
 determining a desired cylinder air amount based
30 on at least an operating condition of said engine; and
 adjusting valve timing of a cylinder based on said engine position and said desired cylinder air amount.

19. The method of Claim 18 wherein said at least an operating condition of said engine is a temperature of said engine.

5 20. The method of Claim 18 wherein said at least an operating condition of said engine is a temperature of ambient air.

21. The method of Claim 18 wherein said at least an
10 operating condition of said engine is a desired engine torque amount.

22. The method of Claim 18 said adjusting valve timing includes setting the stroke of said cylinder.

15

23. A computer readable storage medium having stored data representing instructions executable by a computer to control an internal combustion engine of a vehicle, said storage medium comprising:

20 instructions for processing a signal indicative of engine position;

instructions for setting an intake stroke on a cylinder with sufficient piston downward movement to produce an engine output after processing said signal;

25 instructions for positioning valve timing based on said set intake stroke; and

instructions for performing a first combustion event in said cylinder with said set intake stroke.